SANTA CRUZ BIOTECHNOLOGY, INC.

Gram Positive Bacteria Marker (BDI380): sc-57752

BACKGROUND

Bacteria cells are classified as Gram-positive if they retain a crystal violet dye during the Gram stain process. Gram-positive bacteria appear blue or violet under a microscope after the stain has been applied, whereas Gram Negative bacterial look red or pink. This difference in color is mainly due to the characteristics of the cell wall. Gram-positive bacteria generally have a thicker layer of peptidoglycan, a polymer consisting of sugars and amino acids that forms a homogeneous layer outside the plasma membrane. Gram-positive bacteria also have two rings supporting any flagellum and teichoic acids in the cell wall that function as chelating agents and aid in adherence. Major groups of Gram-positive bacteria include the genera *Bacillus*, *Listeria*, *Staphylococcus*, *Streptococcus*, *Enterococcus* and *Clostridium*, as well as the phylum *Actinobacteria*. Gram Positive Bacteria Markers comprise a variety of proteins present on Gram-positive cells, and can aid in the study of function and behavior of this type of bacteria.

REFERENCES

1. Lawrence, N.L. and Scruggs, M.E. 1966. Unusual compound present in cell walls of streptomycin-dependent strains of some Gram-positive bacteria. J. Bacteriol. 91: 1378-1379.
2. Chorpenning, F.W. and Dodd, M.C. 1966. Heterogenetic antigens of Gram-positive bacteria. J. Bacteriol. 91: 1440-1445.
3. Salton, M.R. and Freer, J.H. 1966. Composition of the membranes isolated from several Gram-positive bacteria. Biochim. Biophys. Acta 107: 531-538.
4. Räsänen, L. and Arvilommi, H. 1982. Cell walls, peptidoglycans, and teichoic acids of Gram-positive bacteria as polyclonal inducers and immunomodulators of proliferative and lymphokine responses of human B and T lymphocytes. Infect. Immun. 35: 523-527.
5. Bogdanova, E.S., Mindlin, S.Z., Pakrová, E., Kocur, M. and Rouch, D.A. 1992. Mercuric reductase in environmental Gram-positive bacteria sensitive to mercury. FEMS Microbiol. Lett. 76: 95-100.
6. Sára, M. 2001. Conserved anchoring mechanisms between crystalline cell surface S-layer proteins and secondary cell wall polymers in Gram-positive bacteria? Trends Microbiol. 9: 47-49.
7. van de Wetering, J.K., van Eijk, M., van Golde, L.M., Hartung, T., van Strijp, J.A. and Batenburg, J.J. 2001. Characteristics of surfactant protein A and D binding to lipoteichoic acid and peptidoglycan, two major cell wall components of Gram-positive bacteria. J. Infect. Dis. 184: 1143-1151.
8. Ton-That, H., Marraffini, L.A. and Schneewind, O. 2004. Protein sorting to the cell wall envelope of Gram-positive bacteria. Biochim. Biophys. Acta 1694: 269-278.
9. Schäffer, C. and Messner, P. 2005. The structure of secondary cell wall polymers: how Gram-positive bacteria stick their cell walls together. Microbiology 151: 643-651.

SOURCE

Gram Positive Bacteria Marker (BDI380) is a mouse monoclonal antibody raised against raised against Gram-positive bacteria.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Gram Positive Bacteria Marker (BDI380) is recommended for detection of lipoteichoic acid (LTA) of Gram Positive Bacteria by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SELECT PRODUCT CITATIONS

1. Soto-Pantoja, D.R., Gaber, M., Arnone, A.A., Bronson, S.M., Cruz-Diaz, N., Wilson, A.S., Clear, K.Y.J., Ramirez, M.U., Kucera, G.L., Levine, E.A., Lelièvre, S.A., Chaboub, L., Chiba, A., Yadav, H., Vidi, P.A. and Cook, K.L. 2021. Diet alters entero-mammary signaling to regulate the breast microbiome and tumorigenesis. Cancer Res. 81: 3890-3904.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.